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Reply to Office Action of June 21, 2005

REMARKS/ARGUMENTS

Prior to this Amendment, claims 1-7, 9-11, and 17-20 were pending in this application. No claim amendments are provided with this Amendment, and the complete listing of claims is provided for clarity and completeness.

Rejections of Claims Under 35 U.S.C. §102

In the June 21, 2005 Office Action, the Examiner maintained the rejection of claims 7, 11, and 17-20 under 35 U.S.C. §102(e) as being anticipated by U.S. Pat. No. 6,584,499 ("Jantz"). This rejection is traversed based on the following remarks.

Claim 7 is directed to a method for remotely reconfiguring a data storage system that includes: monitoring a client data storage system, based on such monitoring transmitting a recommended reconfiguration for a monitored master storage unit, receiving a reconfiguration request, in response to the request determining the first configuration of the master storage unit, and then transferring a logical implementation for executing to reconfigure the master storage unit that is generated based on the reconfiguration request, the first configuration, and the results of the monitoring. As discussed in the prior response, Jantz does not teach all of these elements as required for a reference to anticipate a claim, and Applicants request that the rejection be withdrawn.

The prior Office Action cited Jantz at col. 2, lines 12-27 for teaching receiving a reconfiguration request and determining a first configuration of a master storage unit, and Applicants disagreed that Jantz provided the proper teaching at this citation or elsewhere. The June 21, 2005 Office Action (and Response to Arguments) has altered the Jantz citation, and now, the Examiner cites Jantz at col. 5, lines 60-67, col. 16, lines 28-40, col. 22, lines 16-46, and col. 13, lines 42-67 for teaching receiving a reconfiguration request and at col. 15, lines 5-18 for determining a first configuration in response to the request. The Response to Arguments states that the "request for reconfiguration is being sent from the I/O management stations and also is being sent as events from the controllers" such as

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"needs attention" and these requests are responded to update existing configuration or update controller software.

Applicants again disagree that Jantz teaches receiving a reconfiguration request and responding by determining a first configuration (i.e., existing) of a master storage unit. At col. 5, lines 60-67, Jantz simply states that requests from I/O management stations 112, 120 are converted by servers 132, 134 into command packets that are delivered to RAID controllers 128, 130. There is no discussion of a reconfiguration request being sent and particularly, that one is received "at the remotely-located reconfiguration system" (note, the I/O management station cannot be cited as the remote reconfiguration system AND for transmitting the reconfiguration request which in claim 1 is received by the remote reconfiguration system).

Jantz at col. 16, lines 28-40 describes a monitor applet 822 that provides an "event listener" thread for management station. Again, there is no discussion of transmission or receipt of a reconfiguration request for a client data storage system, and Applicants strongly disagree that the language of claim 7 is read on by "events" transmitted by applet 822 as asserted by the Examiner in the Response to Arguments.

At col. 22, lines 16-46 and continuing through the rest of col. 22+, Jantz is discussing the desirability of providing event notifications of a configuration change NOT that remote reconfiguration system is receiving a request for reconfiguration and responding by determining the first or existing configuration of the system. Instead, the event notification is used to notify other devices in the network of the changed or second configuration of the device.

At col. 13, lines 42-67, Jantz teaches an information window 604 used to view the status of nodes in a network but provides no teaching of the claim limitations of claim 7. At col. 15, lines 5-18, Jantz teaches the starting of a "discover monitor applet (DMA)" but fails to teach "in response to receiving of the reconfiguration request" that it would be useful to determine a first or existing configuration of a master storage unit "with the remotely-located reconfiguration

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system." For these reasons, Jantz does not anticipate the method of claim 7, and the rejection should be withdrawn as not properly supported.

Further, the Office Action cites Jantz for teaching transmitting a recommended reconfiguration that is generated based on the reconfiguration request, the first configuration, and results of monitoring of the data storage system. The August 21, 2005 Office Action cites Jantz at col. 2, lines 22-27, col. 3, lines 1-22, col. 24, lines 11-13, and in the Response to Arguments at col. 4, lines 16-38 and col. 7, lines 20-65. Generally, Jantz teaches, beginning at col. 17, line 44 that the actions a user takes to change the configuration of the managed devices in a network, and this general discussion fails to suggest that a recommended reconfiguration is provided based on monitoring but instead teaches passing a change request to each controller of a managed device to change its configuration when initiated by a user, i.e., there is not a preparation of a reconfiguration based on monitoring, on a determined existing, first configuration, and on a request from the data storage system.

Addressing the Examiner's specific citations, at col. 2, lines 22-27, Jantz teaches a "step of editing the source configuration description before issuing the configuration change commands" to the managed devices. At this point, Jantz fails to teach that a transferred logical implementation is "generated based on the reconfiguration request, the first configuration, and results of the monitoring" as called for in claim 7.

At col. 3, lines 1-22, Jantz teaches that a controller at the managed storage device processes a configuration request from the management application to configure a storage device(s) and then informs the management application that the configuration has been implemented. There is no teaching here that the configuration request is "generated based on the reconfiguration request" (see, discussion above for lack of Jantz teaching receiving a reconfiguration request from a data storage system) or that the request is generated based on a first configuration or based on monitoring results. Similarly, at col. 24, lines 11-13, Jantz teaches that a user can issue a configuration change command but there is no

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discussion that configuration change command is generated based on a reconfiguration request from the data storage system, on monitoring results, or on the existing, determined configuration of the data storage system

At col. 4, lines 16-38, Jantz provides an introduction to its method and apparatus but no teaching of the transmitting step of claim 7 (monitoring is mentioned but not in relation to responding to a reconfiguration request to generate a reconfiguration of a storage system/unit). At col. 7, lines 20-65, Jantz discusses discovering a set of managed devices and monitoring such devices. Configuration is also performed of some of the managed devices. However, there is again no discussion of transferring "a logical implementation of a data storage system configuration" that is "generated based on the reconfiguration request, the first configuration, and results of the monitoring." As discussed above, there is no discussion in Jantz of receiving a reconfiguration request and, as a result, such a request cannot be used in generating a logical reconfiguration implementation. As this discussion of the particular citations of Jantz shows, Jantz does not disclose the transferring step of claim 7, and for this additional reason, the rejection of claim 7 based on Jantz is improper and should be withdrawn.

Claim 11 depends from claim 7 and is believed allowable over Jantz as depending upon an allowable base claim.

Referring to claim 17, this claim is directed to a method of remotely reconfiguring a data storage system. The method of claim 17 calls for a reconfiguration system to receive a reconfiguration request, to determine a first configuration of a data storage system associated with the request, to identify a "level of configuration services" for the data storage system, and to define a logical implementation for the data storage system based on the identified level of service and based on the first configuration. The logical implementation is then transferred to the storage management host installed on the data storage system and executed to reconfigure the master storage unit. The reasons provided for allowing claim 7 are believed applicable to claim 17.

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Additionally, Jantz fails to show the feature of defining a logical implementation of a reconfiguration based on an identified level of service and on a first configuration. The term "level of service" is defined in Applicants' specification at least in the paragraph beginning at page 15, line 12, and the use of such levels of service to determine/define how a system is to be reconfigured is not taught or suggested by Jantz.

The Office Action cites Jantz at col. 21, lines 25-42 for teaching determining the level of reconfiguration services from a plurality of service level options with its discussion of "identifying software version." However, in the cited text, Jantz is merely discussing whether the software on the managed device is of the correct version to "perform a particular configuration update." Jantz is not teaching determining what level of service an operator of a storage system expects based on the level of service option they have selected. Claim 17 calls for the level of service to be determined AND for this level of service to be used to define a logical implementation of a reconfiguration. Jantz fails to teach either determining the level of service of storage system OR defining a reconfiguration based on such a determined level of service.

The Response to Arguments again urges the version of software determining teaches this limitation, but Applicant disagrees as the software version check in Jantz is simply used to determine whether a new installation software version needs to be installed. The software version is not used to define what type of reconfiguration should be provided to a storage unit/system. For this additional reason, Jantz fails to anticipate the system of claim 17.

Yet further along these lines, the Office Action at para. 18 with respect to claim 9 states that Jantz "fails to show a method including identifying a predetermined level of reconfiguration services from a plurality of service level options and creating the logical implementation based on the identified level of reconfiguration services." Applicants agree with this statement which supports the allowance of Claim 17 and is in direct conflict with the Response to Arguments at para. 26.c.

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Claims 18-20 depend from claim 17 and are believed allowable for at least the reasons provided for allowing claim 17. Further, claim 18 defines what is meant by "service level options." The Office Action cites Jantz at col. 5, lines 12-23 for teaching this limitation, but at this citation, Jantz is merely discussing that the system of devices shown in Figure 1 of Jantz is an exemplary "configuration" of a storage system and is not discussing service level options. The Response to Arguments fails to discuss this additional reason for allowance of claim 18.

Rejections of Claims Under 35 U.S.C. §103

In the Office Action, claims 1, 4, 5, 9 and 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Jantz in view of U.S. Pat. No. 6,009,466 ("Axberg"). This rejection is traversed based on the following remarks.

Claim 1 is directed to a remote configuration computer system that includes a storage management host installed in a client data storage system. The data storage system has a first configuration, and the storage management host provides remote access and a communication link to the master storage unit and host of the data storage system. The system further comprises a reconfiguration center located remote to the storage management system. The reconfiguration center receives a reconfiguration request and in response transfers a logical implementation "selected or created based on the reconfiguration request and the first configuration" to the client data storage system "via the storage management host." The combination of Jantz and Axberg fails to teach or suggest a system for remote reconfiguring of a data storage system as called for in claim 1, and Applicants request that this rejection be withdrawn.

The reasons provided for allowing claim 7 over Jantz are believed applicable to claim 1, and Axberg fails to overcome the deficiencies of Jantz. As with claim 7, claim 1 calls for the remote reconfiguration center to receive a reconfiguration request. As discussed with reference to claim 7, Jantz fails to teach this limitation. There is no discussion of any of the managed devices or the client system requesting reconfiguration (the notification of events is not a transmittal of a request

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for reconfiguration but merely a transmittal of information such as completion of a change of configuration as discussed above with reference to claim 7) but instead this decision is made by an operator of the Jantz I/O management stations (which the Examiner admits sends the request for reconfiguration in paragraph 26.a. of the Response to Arguments). Axberg does not overcome this deficiency, and is not cited for providing this teaching. Hence, claim 1 is not suggested by the combined teaching of Jantz and Axberg, and the rejection should be withdrawn.

Further, claim 1 calls for the logical implementation is "selected or created based on the reconfiguration request and the first configuration." As discussed above with reference to claim 7, Jantz fails to teach receiving a reconfiguration request and so, cannot teach selecting or creating a logical implementation based on such a request. The logical implementation is also based on the first configuration. Jantz provides no teaching that it is useful or desirable to select or create a logical implementation defining a second configuration based on the first or existing configuration of its managed devices. For this additional reason, Jantz fails to teach or suggest all of the limitation of claim 1. Further, Axberg is only cited for teaching a data storage subsystem and not for overcoming these detailed deficiencies of Jantz. Hence, the combination of Jantz and Axberg fails to make the system of claim 1 obvious.

Claims 4 and 5 depend from claim 1 and are believed allowable for at least the reasons for allowing claim 1.

Claim 9 calls for determining a level of reconfiguration services and creating the logical implementation based on the identified level. As discussed thoroughly with respect to claim 17, Jantz fails to teach or suggest the utilization of levels of service with regard to generating reconfiguration logical implementations.

Axberg is cited at col. 2, line 47 to col. 3, line 22 for overcoming this deficiency of Jantz. However, Axberg at this citation is discussing a step-by-step process of configuring devices in an information processing network but provides no discussion that such a process should (or is) performed based on a predetermined level of service (such as defined in Applicants' specification) for the

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network. Hence, Axberg fails to overcome the deficiencies of Jantz. Claim 10 is similar to claim 18, and the reasons for allowing claim 18 over Jantz are applicable to claim 10. For these additional reasons, claims 9 and 10 are allowable over Jantz and Axberg.

The Office Action also rejected claims 2 and 3 under 35 U.S.C. §103(a) as being unpatentable over Jantz in view of Axberg further in view of U.S. Pat. No. 5,151,895 ("Vacon"). Claims 2 and 3 depend from claim 1 and are believed allowable as depending from an allowable base claim. Further, Vacon fails to overcome the deficiencies of Jantz and Axberg discussed above with reference to claim 1.

The Office Action also rejected claim 6 under 35 U.S.C. §103(a) as being unpatentable over Jantz in view of Axberg and further in view of Official Notice. Claim 6 depends from claim 1 and is believed allowable as depending from an allowable base claim.

Conclusions

Based on the above remarks, Applicants respectfully request that a timely Notice of Allowance be issued in this case.

No fee is believed due for this submittal. However, any fee deficiency associated with this submittal may be charged to Deposit Account No. 50-1123.

Respectfully submitted,

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